



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,843	03/26/2001	John U. Knickerbocker	END000008US1	9394

7590

11/19/2002

Connolly Bove Lodge & Hutz LLP
P.O. Box 19088
Washington, DC 20036-3425

EXAMINER

ANDUJAR, LEONARDO

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 11/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/817,843

Applicant(s)

KNICKERBOCKER ET AL

Examiner

Leonardo Andújar

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 4-8, 11-16 and 22-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9, 10 and 17-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-3, 9-10 and 17-21 in Paper No. 9 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 recites the limitation "the method of claim 2" in line 2. There is insufficient antecedent basis for this limitation in the claim. Also, claim 2 is not a method claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application

Art Unit: 2826

being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-3, 9 and 17-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Elenius et al. (US 6,441,487).

7. Regarding claim 1, Elenius (e.g. figs. 1 and 2) shows an electronic package comprising:

- A dielectric substrate 22 having a major surface (top surface);
- And a conductive foil 30 having a smooth portion;

8. The conductive foil is laminated with the substrate major surface. Also, the smooth portion contacts the major surface of the dielectric substrate.

9. Regarding claim 2, Elenius discloses that the conductive foil may comprise aluminum, nickel or copper (col. 7/lls. 1-28).

10. Regarding claim 3, Elenius discloses that the conductive foil may comprise a high electrical conductivity material such as aluminum, nickel, titanium or copper (col. 7/lls. 1-28).

11. Regarding claim 9 (as understood), Elenius shows that the package was fabricated.

12. Regarding claim 17, Elenius (e.g. figs. 1 and 2) shows an electronic package comprising:

- A semiconductor substrate 12 having a major surface;

- A first mechanically compliant dielectric layer 22 formed over the major surface of the substrate and having a at least one first opening formed therethrough;
 - A first electrical contact pad 18 formed in the first opening and in electrical contact with the substrate;
 - A second mechanically compliant dielectric layer 24 formed over the first compliant layer and having at least one second opening formed therethrough wherein the second opening is substantially offset from the first opening;
 - A mask layer 32 formed over the second compliant layer and having a third opening therethrough in communication with the second electrical contact pad;
 - And a solder ball 28 solderably connected to the second electrical contact pad and extending through the third opening.
13. Regarding claim 18, Elenius shows that the mask is a solder mask.
14. Regarding claim 19, Elenius shows that the compliant layers can be made of benzocyclobutene. Benzocyclobutene is a photoresist material (e.g. US 6,361,926, col.1/lls. 56-59).
15. Regarding claim 20 and 21, Elenius discloses that the contact pads may comprise aluminum, nickel or copper (col. 7/lls. 1-28).
16. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's Admitted Prior Art (APA).
17. Regarding claim 10, APA (e.g. fig. 1) shows a controlled contact pad comprising:

Art Unit: 2826

- A dielectric substrate 107 having a major surface;
- And a conductive foil laminated to the major surface.

18. The foil has a smooth 103 side and a dendritic side 105. Also, the dendritic side contacts the major surface of the dielectric substrate.

Conclusion

19. Papers related to this application may be submitted directly to Art Unit 2826 by facsimile transmission. Papers should be faxed to Art Unit 2826 via the Art Unit 2826 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2826 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2826 Fax Center is to be used only for papers related to Art Unit 2826 applications.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Leonardo Andújar** at **(703) 308-0080** and between the hours of 9:00 AM to 7:30 PM (Eastern Standard Time) Monday through Thursday or by e-mail via Leonardo.Andujar@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn, can be reached on (703) 308-6601.

21. Any inquiry of a general nature or relating to the status of this application should be directed to the **Group 2800 Receptionist** at **(703) 305-3900**.

22. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
	11/02

Application/Control Number: 09/817,843

Page 6

Art Unit: 2826

U.S. Class / Subclass (es): 257/690, 691, 698 and 700	
Other Documentation:	
Electronic Database(s): East (USPAT, US PGPUB, JPO, EPO, Derwent, IBM TDB)	11/02

Leonardo Andújar

Patent Examiner Art Unit 2826

LA

11/9/02

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

